

SMHB – WP4 – Task 2

## JADE - A Datamanagement Solution

8<sup>th</sup> international dCache Workshop  
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Bastian Tweddell (b.tweddell@fz-juelich.de)  
Jülich Supercomputing Centre



# What is JADE

- **Jülich Aachen Data Exchange**
- Data management and transfer solution for the SMHB Helmholtz Portfolio Theme
  - Also presents as a candidate for HBP
  - JSC will be data management centre
- Architectural design + Implementation
- Aims:
  - Highly flexible
  - Handle Big Data Capacity
  - Extensible on dynamically changing environment and requirements
  - Comply with security policies
  - No development from scratch,
    - make use of available tools
- Technically: dCache

*Supercomputing and Modeling  
for the Human Brain*

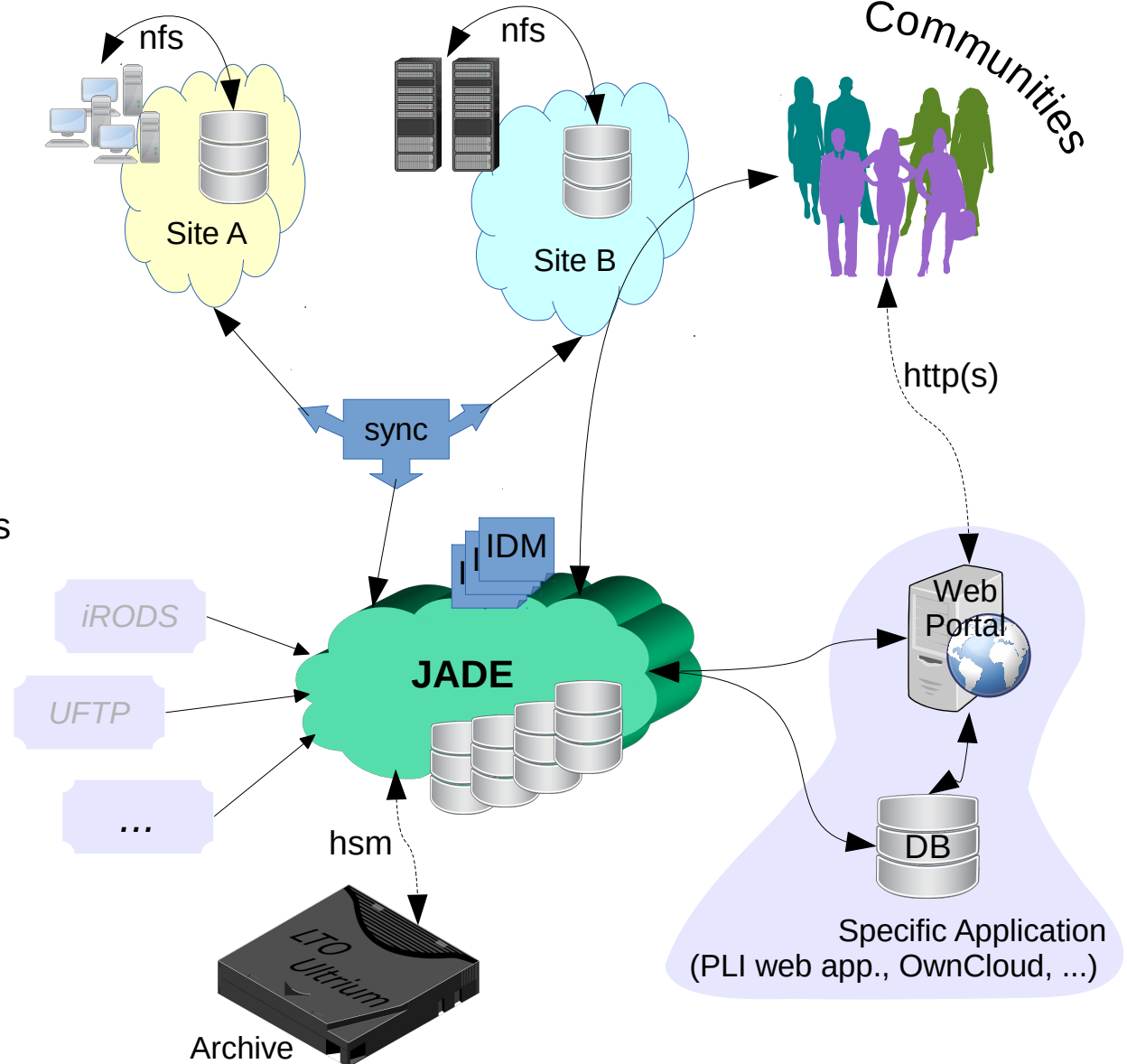
Strategic aims is to create a realistic model of the structural and functional organisation of the human brain.

Approx 2 PB in 5 years

# Use cases

Features requested:

- Simple Data exchange
  - Up/download arbitrary/huge data
  - ACL based
- Capacity
- Data synchronization
- Data preservation
- Multitude of data access methods
  - WebDAV
  - fuse / file browser
  - https (via portal)
  - pNFS
  - *GridFTP*
  - *deap / xrootd...*



# Status of JADE

Jan 2013	Begin of SMHB Evaluation of project requirements
Jan 2014	Start of JADE architecture design
Apr	Implementation of JADE testbed "Jülich ↔ Aachen" begins. <ul style="list-style-type: none"><li>• Small, but distributed dCache instance</li><li>• Evaluate functionality of features</li><li>• Example application: PLI visualisation</li></ul>
May	Acquiring resources at RWTH for testbed
<i>next</i>	Opening testbed to SMHB communities

now

## JADE testbed hardware @ JSC:

- Two server nodes with each:
  - X86\_64, 4 cores Xeon
  - 32 GB DDR3
  - (sadly) 1GB Ethernet
  - 9TB gross disk capacity

# Status of JADE

## Notes on the realisation of the test bed:

- OS: debian (stable/wheezy)
- OpenJDK7u60
- dCache from github
  - Started with 2.9.0-SNAPSHOT
  - Upgraded to 2.9.1 last week
  - Finally go for 2.10-LTS
- Using /opt layout
  - Easier for changing version and upgrades

## Opens:

- Understanding in
  - dCache internals
    - Tuning, tweaking, ..
  - Pool / space management
  - Replication
- Benchmarks
- TSM integration

## Further interested in:

- Possibilities of combining different IDMs
  - Support for federated identities and storage?
- OwnCloud on dCache
  - Users can define access rights to their data (even public access)
- Small file tape migration

# Thanks